APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/872,552	05/31/2001	Ching-Lan Ho	OR01-04201	2250

			EXAMINER
22835	7590	05/20/2004	LE, MIRANDA

PARK, VAUGHAN & FLEMING LLP
508 SECOND STREET
SUITE 201
DAVIS, CA 95616

ART UNIT	PAPER NUMBER
2177	10

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/872,552	HO ET AL.
	Examiner	**Art Unit**	
	Miranda Le	2177	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 February 2004*.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-12,14-21 and 23-27* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-12,14-21 and 23-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____ .

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on 03/12/2004 has been entered.

This communication is responsive to Amendment B, filed 02/23/2004.

2.   Claims 1-3, 5-12, 14-21, 23-27 are pending in this application. Claims 1, 10, 19 are

independent claims. In the Amendment B, claims 1, 6, 10, 15, 19, 24 have been amended.   This

action is made non-Final.

3.   The objection to the specification (claim objection) of the invention has been withdrawn

in view of the amendment.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the invention was
> made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be
> negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the
claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various
claims was commonly owned at the time any inventions covered therein were made absent any
evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out
the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-2, 7-11, 16-20, 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kennedy et al. (US Patent No. 5,675,818), in view of Edberg et al. (US Patent No. 5,873,111).

As to claims 1, 10, 19, Kennedy teaches "a method for facilitating use of a collation element that supports a large number of characters, comprising: receiving the collation element" col. 7, line 47 to col. 8, line 52;

"reading a primary weight value from a primary weight field within the collation element" at col. 8, line 53 to col. 9, line 12;

"if the primary weight value falls within a reserved set of values, reading an additional portion of the primary weight value from a secondary weight field within the collation element and a tertiary weight field within the collation element" at col. 9, line 14 to col. 10, line 10;

"if the primary weight value is not within the reserved set of values, reading a secondary weight value from the secondary weight field within the collation element" at col. 7, line 47 to col. 8, line 67, col. 9, lines 1-12;

" reading a tertiary weight value from the tertiary weight field within the collation element" at col. 7, line 47 to col. 8, line 52,

"the primary weight value identifies a character" at col. 7, line 47 to col. 8, line 52;

"wherein the secondary weight value can specify an accent on the character" at col. 7, line 47 to col. 8, line 14;

"wherein the tertiary weight value can specify case information for the character" at col. 7, line 47 to col. 8, line 30.

Kennedy does not specifically teach "each different primary weight value identifies a different character, whereby the size of the primary weight field increases the number of characters that can be represented by the collation element". However, Edberg teaches this limitation at col. 15, lines 4-65, col. 16, line 59 to col. 17, line 36.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Kennedy with the teachings of Edberg to include "each different primary weight value identifies a different character, whereby the size of the primary weight field increases the number of characters that can be represented by the collation element" in order to provide a system and method for organizing information to perform accurate and efficient collation for information such as strings of text according to the rules of various languages, and to provide a number of improvements over the existing string comparison routines: portability, improved performance, ability to handle Unicode, and improved linguistic capability (col. 6, lines 49-57).

As to claims 2, 11, 20, Kennedy teaches "if the primary weight value falls within a reserved set of values, the method additionally comprises: setting the secondary weight value to a secondary default value" at col. 8, line 54 to col. 9, line 11, Fig. 2C;

"setting the tertiary weight value to a tertiary default value" at col. 8, line 54 to col. 9, line 11, Fig. 2C.

As to claims 7, 16, 25, Kennedy teaches "the collation element is taken from a collation weight table that is used to map characters to collation weights in order to establish an ordering between strings of characters" at col. 14, lines 1-62.

As to claims 8, 17, 26, Kennedy teaches "constructing a sorting key for a string by:

reading each character in the string" at col. 14, lines 1-62;

"looking up a corresponding collation element for each character from the collation

weight table" at col. 7, line 6 to col. 8, line 52;

"adding the corresponding collation element for each character to the sorting key" at col.

7, line 6 to col. 8, line 52.

As to claims 9, 18, 27, Kennedy teaches "wherein the sorting key is associated with a

record within a database" at col. 7, line 6 to col. 8, line 52, Fig. 1C;

"wherein the sorting key is used to construct a linguistic index for the database" at col.

13, lines 11-46, col. 7, lines 6-45.

7.   Claims 5-6, 14-15, 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Kennedy et al. (US Patent No. 5,675,818), in view of Edberg et al. (US Patent No. 5,873,111),

and further in view of Davis et al. ("Unicode Technical Standard #10, Unicode Collation

Algorithm").

As to claims 5, 14, 23, Kennedy does not expressly teach "the collation element is four

bytes in size, of which the primary weight field is two bytes, the secondary weight field is one

byte and the tertiary weight field is one byte, unless a value in the primary weight field belongs

to the reserved set of values, in which case the primary weight field takes up all four bytes of the

collation element". However, Davis teaches this limitation on page 33, ¶ 6.11.1.

It would have been obvious to one of ordinary skill in the art at the time of the invention

to modify the teachings of Kennedy, Edberg with the teachings of Davis to include "the collation

element is four bytes in size, of which the primary weight field is two bytes, the secondary

weight field is one byte and the tertiary weight field is one byte, unless a value in the primary

weight field belongs to the reserved set of values, in which case the primary weight field takes up

all four bytes of the collation element" in order to allow implementations to produce culturally

acceptable collation, while putting the least burden on implementations in terms of memory

requirements and performance.

As to claims 6, 15, 24, Kennedy does not explicitly teach "the reserved set of values for

the primary weight value includes hexadecimal values OxFFF0-OxFFFF". However, Davis

teaches this limitation on page 33, ¶ 6.11.1.

It would have been obvious to one of ordinary skill in the art at the time of the invention

to modify the teachings of Kennedy, Edberg with the teachings of Davis to include "the reserved

set of values for the primary weight value includes hexadecimal values OxFFF0-OxFFFF" in

order to provide a Database Management System having a Collation Engine with improved

methods for collating information with internationalization support, in which the Collation

Engine includes an improved method for comparing text strings with a culturally-predictable

result.

Response to Arguments

8.   Applicant's arguments filed 02/23/2004 have been fully considered but they are not

persuasive.

Applicant argues that Kennedy does not teach "reading additional portion s of the

primary value for a character from the secondary and tertiary weight field within the collation

element. On the contrary, the examiner respectfully submits that Kennedy teaches this limitation at col. 3, line 60 to col. 4, line 21, col. 11, lines 27-65. According to the present invention, "the primary weight value identifies a character, the secondary weight value specifies an accent on the character, and the tertiary weight can specify case information for the character (Specification, page 4, lines 9-12). Analogously, Kennedy teaches the primary weight specifies a primary difference between two characters, such as "A" and "B", the secondary weight tracks the difference between similar characters, such as "a" and "å" (i.e. an accent mark, umlaut, col. 8, line 27), the tertiary weight tracks difference due to treatment of case, such as "A" and "a" (i.e. case information), (col. 3, line 64 to col. 4, line 5).

Further, pursuant to the present invention, "the collation element is taken from a collation weight table that is used to map characters to collation weights in order to establish an ordering between strings of characters (Specification, page 4, lines 20-22). Similarly, Kennedy discloses a Collation engine which includes: a Collation Table, a Character Type table, a One-to-two Table, a Two-to-one Table (col. 7, lines 41-45). Kennedy teaches the Collation Engine determines an additional difference between the words (col. 10, lines 28-29), for example, both characters "æ" and "ä" characters expand to "ae" for sorting (col. 10, lines 15-16), each word includes an expansion to "ae" but also includes a weighting specifying the proper locale-specific sort order, therefore, the words are sorted according to their additional weighting, thus yielding the correct sort order (col. 10, lines 28-37). As shown in Figs. 2A-B, Kennedy illustrates determination of primary, secondary, tertiary differences between "A" and "a". A primary weight is first examined, as each character is the same letter of the alphabet, there is no primary difference. A difference in secondary weight is next examined, since there is no difference of

accent mark (col. 8, lines 20-26), the tertiary weight is examined next to provide a particular

country or locale, which specifies additional rule for sorting (col. 8, lines 31-32). Note that the

Expansion Rules 241 includes a bit field for a Tertiary Diffence 244, the particular field is

generally unused for most locales at present, but is included for future compatibility-allowing a

particular locale to specify a tertiary difference for 1to2 character (col. 10, lines 4-9).

Therefore, it is evident that the claim language as presented is still read on by the

Kennedy reference at the cited paragraph in the claim rejections. And, Applicant's arguments

with respect to the amended claims 1, 10, 19 have been considered but are moot in view of the

new ground(s) of rejection.

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to applicant's
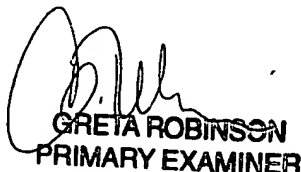disclosure.

Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Miranda Le whose telephone number is (703) 305-3203. The
examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.
If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, John E. Breene, can be reached on (703) 305-9790. The fax number to this Art Unit
is (703) 872-9306. The TC 2100's Customer Service number is (703) 306-5631.

Any inquiry of a general nature or relating to the status of this application should be
directed to the Group receptionist whose telephone number is (703) 305-3900.

Miranda Le
May 18, 2004

GRETA ROBINSON
PRIMARY EXAMINER